VITERBI SLICER FOR TURBO CODES

ABSTRACT OF THE DISCLOSURE

A method for synchronizing receivers that receive turbo encoded signals to a received signal. Turbo encoding may enable signals to be decoded at a much lower signal to noise ratio than previously practical. A traditional method of synchronizing a receiver to an incoming signal is to use a slicer to determine a received symbol and then to compare the determined symbol to the incoming waveform, in order to adjust the phase of the slicer with respect to the incoming signal. At signal low levels, at which turbo encoded signals may be decoded, this slicing method may be prone to errors that may disrupt the synchronization of the receiver to the incoming signal. By replacing the slicer by a Viterbi decoder with zero traceback (i.e. one which does not consider future values of the signal only past values) a prediction as to what the incoming signal is can be made. Because the Viterbi decoder can consider past signal values it can predict the present symbol being received with higher reliability than by using a slicer, which considers only the present value of the incoming signal.

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